ENVIRONMENTAL MONITORING AND ASSESSMENT

Volume 44 Nos. 1-3 February 1997

SPECIAL ISSUE ON
THE 5TH SYMPOSIUM ON OUR ENVIRONMENT
Guest Editors: H.K. Lee and M.K. Wong

Editorial ix

PART I:
ECOLOGY AND ENVIRONMENTAL MANAGEMENT

EDMUND WALLER / Singapore's Environment and Food Production 1–9

B.P.L. GOH and L.M. CHOU / Effects of the Heavy Metals Copper and Zinc on Zooxanthellae Cells in Culture 11–19

B.S.A. YEOH and L.Y. HO / Popular Cognition of National Monuments in Singapore 21–31

K.P.P. TUN, A.C. CHESHIRE and L.M. CHOU / Twenty-Four Hour *in situ* Monitoring of Oxygen Production and Respiration of the Colonial Zoanthid *Palythoa* 33–43

L.M. CHOU / Artificial Reefs of Southeast Asia – Do They Enhance or Degrade the Marine Environment? 45–52

JEFFREY K.Y. LOW, C.B. LENG and L.M. CHOU / Pomacentrid Population Dynamics on Singapore Coral Reefs 53–66

B.P.L. GOH and L.M. CHOU / Heavy Metal Levels in Marine Sediments of Singapore 67–80

NIGEL K.C. GOH, MAYLENE G.K. LOO and L.M. CHOU / An Analysis of Gorgonian (Anthozoa; Octocorallia) Zonation on Singapore Reefs with Respect to Depth 81–89

HO HUA CHEW / A Value Orientation for Nature Preservation in Singapore 91–102

PART II:
GLOBAL ENVIRONMENT

K.A. HUNTER, J.P. KIM and P.L. CROOT / Biological Roles of Trace Metals in Natural Waters 103–147

P. WILDE and M.S. QUINBY-HUNT /Methane Clathrate Outgassing and Anoxic Expansion in Southeast Asian Deeps Due to Global Warming 149–153

PART III:
URBAN ENVIRONMENT

GARY W. HEINKE / The Challenge of Urban Growth and Sustainable Development for Asian Cities in the 21st Century 155–171

P.C. CHUI / Characteristics of Stormwater Quality from Two Urban Watersheds in Singapore 173–181

LIM MENG CHECK / Drainage Planning and Control in the Urban Environment – The Singapore Experience 183–197

HOCK-LYE KOH, POH-ENG LIM and HOOI-LING LEE / Impact Modeling of Sewage Discharge from Georgetown of Penang, Malaysia on Coastal Water Quality 199–209

K.N. TAN and H. CHUA / COD Adsorption Capacity of the Activated Sludge – Its Determination and Application in the Activated Sludge Process 211–217

PART IV:
ENVIRONMENTAL ENGINEERING

S. JEYASEELAN and S. SATHANANTHAN / Clean Technology for Treatment of Photographic Wastes and Silver Recovery 219–229

S. VIGNESWARAN, H.H. NGO and J. JEYASEELAN / Application of Non-Conventional Filtration Technologies in Pollution Control 231–240

A. ALEBIC-JURETIC, T. CVITAS and L. KLASINC / Ozone Destruction on Solid Particles 241–247

TAY JOO-HWA, SHOW KUAN-YEOW and S. JEYASEELAN / Media Factors Affecting the Performance of Upflow Anaerobic Packed-bed Reactors 249–261

TAY JOO HWA and S. JEYASEELAN / Conditioning of Oily Sludge with Alum 263–273

L.C. TAN, V. CHOA and J.H. TAY / The Influence of pH on Mobility of Heavy Metals from Municipal Solid Waste Incinerator Fly Ash 275–284

P.C. CHUI and J.H. TAY / Non-Conventional Construction Materials from Dredging Spoils 285–294

PART V:
ENVIRONMENTAL ANALYSIS

YONG ZHANG and DONGXING YUAN / Determination of PAHs by On-Line Polarization Synchronous Fluorescence With HPLC 295–301

CHEN ZONGMAO and WAN HAIBIN / Degradation of Pesticides on Plant Surfaces and Its Prediction – A Case Study on Tea Plant 303–313

R. BOONYATUMANOND, M.S. TABUCANON, C. SIRIWONG and P. PRINYATANAKUN / Distribution of Organochlorine Pesticides in the Chao Phraya River, Thailand 315–325

AINON HAMZAH, M. PAUZI ABDULLAH, SUKIMAN SARMANI and M. AKBAR JOHARI / Chemical and Bacteriological Monitoring of Drinking Water from an Urbanised Water Catchment Drainage Basin 327–338

A. RAHMAN, H.K. LEE and M.A. KHAN / Domestic Water Contamination in Rapidly Growing Megacities of Asia: Case of Karachi, Pakistan 339–360

GE HAILIN, ONG LYE HO and YANG XINHAO / Analysis of Pesticides Using a Polyppyrole Modified Electrode 361–367

X.W. LUO, H.Y. ONG, C. TAN, S.C. FOO and C.N. ONG / Environmental and Biological Monitoring of Organochlorine Residues after the Plague Epidemic in Surat, India – A Preliminary Study 369–374

J. LUI, A. GÜNTHER and U. BILITEWSKI / Detection of Methamidophos in Vegetables Using a Photometric Flow Injection System 375–382

U. CHIACCHIO, V. LIBRANDO and G. MAGAZZÙ / Monitoring Studies of Augusta bay Marine Waters 383–390

K.K. CHEE, M.K. WONG and H.K. LEE / Microwave-Assisted Solvent Extraction of Air Particulates for the Determination of PAHs 391–403

J. WU, H.K. LEE, M.K. WONG and C.N. ONG /Determination of Carcinogenic Heterocyclic Amines in *Satay* by Liquid Chromatography 405–412

PHILIPPE DESMARTIN, ZLATAN KOPAJTIC and WERNER HAERDI / Radiostrontium-90 (^{90}Sr) Ultra-Traces Measurements by Coupling Ionic Chromatography (HPIC) and On Line Liquid Scintillation Counting (OLLSC) 413–423

P.W. KOK, H.Y. ONG, M.K. WONG, W.K. AU, K.T. TAN, W.H. PHOON and C.N. ONG / Environmental and Biological Assessment of Exposure to Benzene in Petroleum Workers 425–431

K.C. NG, G. POI, C.M. PUAH, V. DE CASTRO and P.L. ROGERS / Monitoring of Phenol in Wastewater Bioremediation by HPLC 433–436

K.C. NG and Z.L. CHENG / Environmental Monitoring of Benzene and Alkylated Benzene from Vehicular Emissions 437–441

PAUZI ABDULLAH / Hydrocarbon Pollution in the Sediment of Some Malaysian Coastal Areas 443–454

I. ORLIĆ, BAO WENLAN, F. WATT and S.M. TANG / Air Pollution in Singapore: Its Multielemental Aspect as Measured by Nuclear Analytical Techniques 455–470

S.X. GUO and S.B. KHOO / Formation of a Mercury Plated Carbon Paste Electrode by Electroreduction of a Mercury (II) Diethyldithiocarbamate Modified Carbon Paste 471–480

SIHAI LI, HUANG SHIN NGEW, S.O. HARDY CHAN, SIU CHOON NG, HIAN KEE LEE and T.S. ANDY HOR / Debromination of 1,4-Dibromobenzene and 4,4′-Dibromobiphenyl: A Model for Cleansing of PCBs 481–485

SUSHILA KRISHNASWAMY-CHANG / Biflagellated Unicellular Algae as Detectors of Pesticide Contamination in Water 487–502

H.FR. SCHRÖDER / Mass Spectrometric Detection and Identification of Polar Pesticides and Their Degradation Products – A Comparison of Different Ionization Methods 503–513

S.J. SANTOSA, S. TANAKA and K. YAMANAKA / Sequential Determination of Trace Metals in Sea Water by Inductively Coupled Plasma Mass Spectrometry after Electrothermal Vaporization of Their Dithiocarmabamate Complexes in Methyl Isobutyl Ketone 515–528

LIZHONG ZHANG, XUEMEI GUO and SOMENATH MITRA / Using a Composite Membrane for Enhanced Sensitivity and Faster Response in On-Line Membrane Extraction Microtrap Gas Chromatography 529–540

T. MÜLLER, T. MAURER and R. KUBIAK / Volatilization and Metabolism of Pesticides under Simulated Outdoor Conditions 541–547

LAWRENCE C.C. KOE and W SHEN / High Resolution GC – MS Analysis of VOCs in Wastewater and Sludge 549–561

ZOU SHICHUN, ZHANG ZHANXIA, SHENG GUOYING, MIN YUSHUN and FU JIAMO / Determination of Trace Organochlorinated Pesticides and Polychlorinated Biphenyls in Water 563–568

YANG YANHONG, SHENG GUOYING, FU JIMO and MIN YUSHUN / Organochlorinated Compounds in Waters of the Pearl River Delta Region 569–575

J. WU, M.K. WONG, H.K. LEE, C.Y. SHI and C.N. ONG / Determination of Polycyclic Aromatic Hydrocarbons in *Rougan*, a Traditional Chinese Barbecued Food, by Capillary Gas Chromatography 577–585

K.K. CHEE, M.K. WONG and H.K. LEE / Optimization of the Microwave-Assisted Solvent Extraction of Petroleum Hydrocarbons in Marine Sediment and Soil 587–603

C.Y. ZHOU, M.K. WONG, L.L. KOH and Y.C. WEE / Soil Lead and Other Metal Levels in Industrial, Residential and Nature Reserve Areas in Singapore 605–615

Call for Papers 617–621